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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	WT Docket No. 97-153
Amendments to Part 90 of the	)	RM-8584
Commission's Rules Concerning	)	RM-8623
Private Land Mobile Radio Services	)	RM-8680
	)	RM-8734
	)	

COMMENTS

Teligent, L.L.C. ("Teligent"), by its attorneys, hereby submits these comments concerning the above-captioned Notice of Proposed Rulemaking ("Notice"). Teligent opposes the proposal in the Notice to permit licensees in the Public Safety, Emergency Medical, and Special Emergency Radio Services to use, on a secondary basis and without additional authorization from the Commission, the 24.20-24.25 GHz ("24 GHz") band for purposes of operating traffic light control systems.[1] Such systems would allow public safety emergency vehicles to control traffic lights to facilitate a "clear route" for an emergency run or to activate a flashing (strobe) light on traffic signals to warn motorists of an approaching emergency vehicle.[2] Public safety emergency vehicles would

[1]Notice at ¶ 12.

[2]*Id.*

control traffic lights and activate flashing warning lights by means of a signal emitted from transmitters mounted on these vehicles.

Teligent holds licenses in the Digital Electronic Message Service ("DEMS"), which the Commission recently relocated from the 18 GHz band to the 24.25-24.45 and 25.05-25.25 GHz bands.[3] If implemented, the Notice's proposal for the use of the 24 GHz band for traffic light control systems likely would cause interference to licensed and operational 24 GHz DEMS operations. Thus, the public interest necessitates that the Commission either find a different frequency band for traffic light control operations, or impose limitations on power and frequency stability that minimize the likelihood of interference from such operations into DEMS stations. In addition, the Commission should adopt specific requirements to ensure that users are informed of the secondary status of traffic light control operations and the obligations attached to that status.

I. Permitting Traffic Light Control Systems in the 24 GHz Band Would Cause Harmful Interference to DEMS Stations

As a preliminary matter, the Commission's classification of mobile traffic control transmitters as radiolocation devices is incorrect. Such operations are a

[3] *Amendment of the Commission's rules to Relocate the Digital Electronic Message Service for the 18 GHz Band to the 24 GHz Band and to Allocate the 24 GHz Band for Fixed Service,* 12 FCC Rcd 3471 (1997). The complete DEMS reallocation was to the 24.25-24.45 and the 25.05-25.25 bands.

form of mobile data communications and, thus, should be allocated to frequencies already available for such services and not to the 24 GHz band.[4]

Furthermore, the technical characteristics of the proposed traffic light control systems make it highly likely that such systems would cause harmful interference to DEMS stations, which are ubiquitously deployed and operate in the 24 GHz band. First, the signals from traffic light control transmitters would be prone to drifting into the DEMS band and, thus, interfering with DEMS stations. Section 90.103(c)(22) of the Commission's rules prescribes a frequency stability for radiolocation services at 2000 PPM (equivalent to 0.2%). The Notice proposed to retain these technical parameters and to permit an FM deviation of +/- 5 MHz, which means that the signal can occupy a bandwidth of 10 MHz. The 2000 PPM frequency stability of 0.2% means that the center of frequency of the 24 GHz transmission is permitted to drift a full 48 MHz (*i.e.*, 24,000 MHz x 0.002). Thus, a transmitter that is nominally at 24.225 GHz (24,225 MHz) would nominally occupy 24,220-24,230 MHz but could drift so that it occupies 24,268-24,278 MHz, well into the DEMS band.

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[4]We have no objection, however, to the proposed operation of motorist alert signals at 24.10 GHz that would be received by K-band consumer electronics radar detectors. *See* Notice at ¶ 11. Unlike the case with traffic control transmitters, the use of 24 GHz for motorist alert signals is consistent with the widespread deployment of consumer electronics radar detectors.

Second, the Commission's rule governing power limits for Part 90 services does not prescribe power limits for radiolocation transmitters in the 24.05-25.25 GHz band.[5] The absence of any power limits on the proposed traffic light control systems will increase the potential for harmful interference into DEMS stations.

Lastly, the Commission proposes to authorize the operation of traffic control transmitters on virtually all emergency control vehicles, which by their very nature are ubiquitous in major metropolitan areas. Coupled with the propensity of the traffic control signals to drift into DEMS frequencies, and the likelihood that the absence of prescribed power limits would aggravate such drifting, the ubiquity of mobile traffic control transmitters likely would result in widespread, harmful interference to DEMS stations that would be impossible to control. Given these interference concerns, the use of the 24 GHz band by ubiquitously deployed mobile transmitters designed for controlling traffic signals would conflict with the Commission's pre-existing allocation for DEMS.

II. The Commission Must Adopt Appropriate Technical Regulations Before Allocating Traffic Signal Control Operations to the 24 GHz Band

Should the Commission allocate the 24 GHz band for traffic signal control operations, it must first adopt appropriate power limits and frequency stability

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[5]47 C.F.R. § 90.205(m)

limits, as well as appropriate secondary status requirements, to address the interference concerns identified above.

Frequency Stability Factor. The proposed frequency stability factor of 0.2% for traffic light control transmitters would provide inadequate protection to DEMS stations from interference. The Commission has proposed to require a stability of 0.001% in the 38 GHz band, which was widely supported in comments.[6] That level is also appropriate for traffic signal control transmitters at 24 GHz. In addition, the Commission should reaffirm that the emission mask C of Section 90.219 of the Commission's rules applies to these transmitters. Moreover, the Commission should require that emissions outside the 24.20-24.25 GHz band comply with an attenuation limit of 43+10 log(P).

Output Power Limit. Given the significant potential for interference and the anticipated ubiquity of traffic light control transmitters, the Commission should not allocate traffic signal control operations to the 24 GHz band without first prescribing reasonable power limits for these transmitters. A review of the Commission's equipment authorization files shows that existing police radars that operate on a primary basis in the 24.05-25.25 GHz band employ a power level of 50 to 100 milliwatts. Given the secondary nature of the proposed traffic signal

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[6]*See Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 Bands,* ET Docket No. 95-183, 11 FCC Rcd 4930, 4985.

control transmitters, and the possibility that they might interfere into police radar operations as well as DEMS, the Commission should assign an output power limit of 5 to 10 milliwatts to traffic light control systems in order to ensure that interference from such systems will be kept under control. A power limit at this level is needed to prevent interference from, for example, a traffic signal control transmitter mounted on an ambulance into a police radar. The traffic signal control transmitter would be secondary, while the police radar is primary.[7]

Equipment Authorization. Teligent agrees that type acceptance is the appropriate form of equipment authorization that should be applicable to traffic signal control transmitters. In ET Docket No. 97-94, the Commission is proposing to substitute certification in place of type acceptance. Teligent would have no objection to certification as a form of equipment authorization for traffic signal control transmitters, so long as applicants for certification are required to supply test measurements to the Commission prior to a grant. Teligent would oppose, however, any change in the equipment authorization process that would allow manufacturers of traffic signal control transmitters to self-certify their products. Because such an approach to equipment authorization would make it difficult for

[7]Inasmuch as the transmitter mounted on the ambulance could be considered a "safety service" under the ITU and FCC definitions, it would be more appropriate to assign a frequency in a band that is already allocated for mobile communications on a primary basis.

the FCC to ensure compliance with the equipment requirements and to isolate and shut down any defective transmitters, it likely would subject DEMS stations to increased interference.

Although the Notice is silent on the appropriate form of equipment authorization for traffic signal control receivers, Certification also should be required for such products. In ET Docket No. 97-94, the Commission proposes to relax the equipment authorization requirements for most unintentional radiators from certification to Declaration of Conformity ("DoC"), a self-certification process. Because these receivers are a completely new product without any track record of compliance, the DoC procedure is not appropriate for traffic signal control receivers.

Secondary Status. Although the Commission's proposal provides that traffic light control transmitters are to operate on a secondary basis,[8] the Commission has proposed no specific procedures to enforce secondary status and force emergency services to shut down their transmitters when interference occurs. The lack of specific procedures doubtlessly will lead to serious enforcement problems, and will impose large administrative burdens upon the Commission and upon DEMS licensees, like Teligent.

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[8]A secondary service must avoid causing interference into licensees operating under a primary allocation, and upon causing such interference must immediately cease operations.

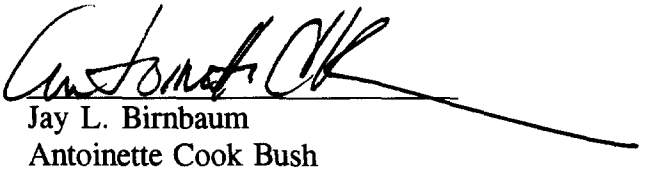
Accordingly, the Commission should adopt specific secondary status requirements for any 24 GHz traffic signal control transmitters. In particular, the Commission should require that such requirements, including the obligation to immediately cease operations upon causing interference, be included in any instruction books supplied with 24 GHz traffic signal control transmitters, and in any advertising or marketing brochures associated with the equipment. In addition, secondary status requirements should include obligations for equipment labelling aimed at informing users of the secondary status of the transmitters.

III. Conclusion

In summary, the Commission's proposal to permit traffic signal control systems to operate in the 24 GHz band creates a substantial risk of interference into the DEMS service. Traffic signal control is not a radiolocation service, it is a mobile data communications service and should operate in frequencies allocated for that purpose. If, however, the Commission were to allow such operations in the 24 GHz band, it must not do so before imposing specific technical regulations concerning power and frequency stability that minimize the likelihood of interference, and that notify all users of the secondary nature of the traffic signal control

service and the associated obligation to cease operations upon the incidence of interference.

Respectfully submitted,



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